

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
18 December 2003 (18.12.2003)

PCT

(10) International Publication Number  
**WO 2003/103571 A3**

(51) International Patent Classification<sup>7</sup>: **A61K 39/12**,  
39/295, C12N 7/04, 7/02

(US). PUGACHEV, Konstantin [RU/US]; 26 Harwood  
Road, Natick, MA 01760 (US).

(21) International Application Number:  
PCT/US2003/001214

(74) Agent: MICHAUD, Susan, M.; Clark & Elbing LLP, 101  
Federal Street, Boston, MA 02110 (US).

(22) International Filing Date: 15 January 2003 (15.01.2003)

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,  
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,  
VC, VN, YU, ZA, ZM, ZW.

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/348,949 15 January 2002 (15.01.2002) US  
60/385,281 31 May 2002 (31.05.2002) US

(84) Designated States (*regional*): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI,  
SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

(63) Related by continuation (CON) or continuation-in-part  
(CIP) to earlier applications:

US 60/348,949 (CIP)  
Filed on 15 January 2002 (15.01.2002)  
US 60/385,281 (CIP)  
Filed on 31 May 2002 (31.05.2002)

**Published:**

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

(71) Applicant (*for all designated States except US*): ACAM-  
BIS, INC. [US/US]; 38 Sidney Street, Cambridge, MA  
02139 (US).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): MONATH,  
Thomas, P. [US/US]; 21 Finn Road, Harvard, MA 01451  
(US). GUIRAKHOO, Farshad [AT/US]; 39 Chestnut  
Street, Melrose, MA 02176 (US). ARROYO, Juan  
[US/US]; 102 Ryder Road, South Weymouth, MA 02190

(88) Date of publication of the international search report:  
22 April 2004

*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

WO 2003/103571 A3

(54) Title: FLAVIVIRUS VACCINES

(57) Abstract: The invention provides flavivirus vaccines and methods of making and using these vaccines.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/01214

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A61K 39/12, 39/295; C12N 7/04, 7/02

US CL : 424/199.1, 202.1, 218.1; 435/236, 239

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/199.1, 202.1, 218.1; 435/236, 239

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
USPATFULL, WPIDS, MEDLINE**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6,171,854 B1 (GALLER et al.) 09 January 2001 (09.01.2001), see entire document.	1-15

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"B" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

12 December 2003 (12.12.2003)

Date of mailing of the international search report

13 FEB 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
Facsimile No. (703) 305-3230

Authorized officer

J. S. Parkin

Telephone No. (703) 308-1235